MULTIMEDIA UNIVERSITY

STUDENT IDENTIFICATION NO

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FINAL EXAMINATION

T2, 2019/ 2020

BOM7094 – OPERATIONS MANAGEMENT

(All Sections/ Groups)

13 JANUARY 2020
9.00 a.m – 12.00 p.m
(3 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consist of **SEVEN (7)** pages (including the cover page).

2. Answer **ALL** questions. The marks distributions are given in parentheses.

3. Write all your answers in the **Answer Booklet** provided.

All questions carry equal marks. **(5x20=100 marks)**

Question 1

a. Read the following case and answer the following question.

Microsoft Japan tested a four-day work week and productivity jumped by 40%

Microsoft tested out a four-day work week in its Japan offices and found as a result employees were not only happier – but significantly more productive. For the month of August, Microsoft Japan experimented with a new project called Work-Life Choice Challenge Summer 2019, giving its entire 2,300-person workforce five Fridays off in a row without decreasing pay.

The shortened weeks led to more efficient meetings, happier workers and boosted productivity by a staggering 40%, the company concluded at the end of the trial. As part of the program, the company had also planned to subsidize family vacations for employees up to ¥100,000 or $920. "Work a short time, rest well and learn a lot," Microsoft Japan president and CEO Takuya Hirano said in a statement to Microsoft Japan's website. "I want employees to think about and experience how they can achieve the same results with 20% less working time."

In addition to the increased productivity, employees took 25% less time off during the trial and electricity use was down 23% in the office with the additional day off per week. Employees printed 59% fewer pages of paper during the trial. The vast majority of employees – 92% – said they liked the shorter week. The experiment is not the first time long weekends have been experimented with in the corporate world. In 2018, New Zealand trust management company Perpetual Guardian trialled a four-day work week over two months for its 240 staff members. Employees reported experiencing better work–life balance and improved focus in the office. Staff stress levels decreased by 7%.

Workers have often said they could be more productive with less time in the office. A survey of 1,500 workers and 600 human resources managers by HR consulting firm Robert Half found 66% of workers said they wanted to work less than five days a week. Another experiment published by the Harvard Business Review shows shorter work days, a decrease from the average 8-hour work day to a 6-hour work day, increased productivity. A 2018 survey of 3,000 employees by the Workforce Institute at Kronos found more than half of full-time workers thought they could do their job in five hours a day.

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Microsoft Japan's challenge was just a pilot project, the company told the Guardian in a statement, and it's unclear if these changes will be implemented in offices elsewhere or on a longer term basis. It plans to implement another iteration of the challenge this winter. "In the spirit of a growth mindset, we are always looking for new ways to innovate and leverage our own technology to improve the experience for our employees around the globe," a Microsoft spokesman said.

Source: https://www.theguardian.com/technology/2019/nov/04/microsoft-japan-four-day-work-week-productivity

Is productivity related to labour hours? How did Microsoft achieve higher productivity with less labour hours?

(10 marks)

b. After Motorola, Nokia has now partnered e-commerce major Flipkart for launching smart TVs in the Indian market, marking the smartphone maker's foray into consumer durables space. Flipkart has entered into a strategic relationship with Nokia that grants it the use of the Nokia brand for smart TVs in India — a global first for the brand in the TV category, a statement said. "Flipkart will leverage its understanding of the needs of Indian consumers to develop, facilitate the manufacturing and distribution of the Nokia branded smart TVs, while managing the end-to-end go-to-market strategy," it added.

Discuss the operations strategies of Nokia and Flipkart in the above scenario.

(10 marks)

Question 2

a. Seeking to meet stringent global norms for food safety, the Spices Board has set up a state of the art Quality Evaluation Lab (QEL) at Navi Mumbai for pesticide residue analysis and microbial food safety in spices and spice products. The laboratory, the eighth such facility established by the Board across India, is equipped with the most modern chromatographic and spectroscopic analytical instrumentations.

Jayathilak, Chairman of Spices Board, said that the lab would act as a centre of excellence to decontaminate the pesticide residue in spices. It will make a national database on application of pesticide contamination. "This state of the art lab will elevate us to meet the global standards and export quality spices," he said. The centre is equipped with latest immuno, molecular, biochemical and spectroscopic instrumental techniques for the detection and enumeration of microorganisms in food. The facilities in the laboratory will meet the demand for the next 10 years.

What is the role of quality evaluation lab in Spices Board? What will be the effect of this on quality of spices?

(10 marks)

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b. Many factors play a role in ensuring a great customer experience. While the restaurants always focus on the food and the service, they often overlook the restaurant layout, which in reality plays a crucial part in the overall experience of the customer. Restaurant interior design has also been known to influence the ordering behavior of customers. The restaurant layout also plays a critical role in the restaurant operations and the workflow. You must always include certain design guidelines in a restaurant layout and floor plan design.

Why is layout important to restaurants? Discuss the importance with two examples.
(10 marks)

Question 3

a. Zara is one of the world's most successful fashion retail brands – if not the most successful one. With its dramatic introduction of the concept of "fast fashion" retail since it was founded in 1975 in Spain, Zara aspires to create responsible passion for fashion amongst a broad spectrum of consumers, spread across different cultures and age groups. There are many factors that have contributed to the success of Zara but one of its key strengths, which has played a strong role in it becoming a global fashion powerhouse as it is today, is its ability to put customers first. Zara is obsessed with its customers, and they have defined the company and the brand's culture right from the very beginning.

The Zara brand offers men and women's clothing, children's clothing (Zara Kids), shoes and accessories. The sub-brand Zara TRF offers trendier and sometimes edgier items to younger women and teenagers. There are over 300 designers working here. These designers are at the center of Zara's business, turning around new styles quickly and enabling the company to bring new items to its stores twice a week.

How does new product design help Zara to achieve its competitive strategy?
(10 marks)

b. Tamura manufactures power transformers, switching transformer, pulse transformer, factory automation machinery, choke coil, reactor and industrial transformer for various application and customized for your needs. Amongst the common issues with transformers are winding burnout, mechanical and core failures. These issues can be addressed through our years of experience, strict Quality Assurance policy, Standards Compliance and After Sales support. Ensuring that your transformers to be the highest in quality, most reliable and longer lasting. As a part of quality checking, the QC department selects samples for 12 consecutive days from different bins and checks for the defects per bin. The details are given below. Using the data, find out whether the process is in control under 92%, 95% and 99.75% quality.
(10 marks)

Continued..

Sample day	No. of defects per bin
1	44
2	42
3	48
4	43
5	40
6	39
7	45
8	46
9	42
10	45
11	48
12	44

Question 4

a. TESCO's procurement practice for its groceries begins with its strategy of forecasting consumer trends and relaying the information to the relevant suppliers through its TIE supply network. Through this TIE network system, the company is able to share information with select suppliers about demand situation for groceries and thus ensure there are no stock outs. Tesco's supply chain management has five basic value chain functions that help the company in achieving its business objectives of providing value to the customers: inbound and outbound logistics, internal operations in Tesco, marketing and sales and corporate social responsibility aspect.

As a multinational company having stores in many countries around the world, Tesco has exhibited continued expansion hence it is bound to face many challenges, which might affect the delivery times if not addressed effectively. The key to dealing with this likelihood is to ensure sustainability in its SCM strategies. Various factors have helped the company achieve this. Since the introduction of extranet systems in late 1997 to early 1998, the company has put expansion into account, while creating a platform that integrates information, resources and all time within the entire supply network in a way that ensures efficiency and continuous flow of processes and achieve maximum visibility and sharing of vital information with suppliers. This shows that Tesco has, among other endeavours, improved procurement practices through integration and visibility.

Discuss the supply chain risk strategy adopted by TESCO.

(10 marks)

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b. Given the forecast demand and actual demand for 10-foot fishing boats, compute the tracking signal and MAD.

Year	Forecast Demand	Actual Demand
1	78	71
2	75	80
3	83	101
4	84	84
5	88	60
6	85	73

(10 marks)

Question 5

a. JSK turbine Manufacturing Malaysia Sdn. Bhd. has an annual demand of 16000 kg of steel plates for its turbine manufacturing. From the past experience it has arrived at the ordering cost being RM20 per order and the holding cost is 20% of the price of the product. The price of steel plates varies according to the volume of purchase and the same is given below.

Volume (kg)	Unit price (RM)
1 - 200	150
2001 - 400	145
401 - 500	140
> 500	135

i. Can the company avail the discount?
ii. What is the total cost?
iii. What are the ordering and holding costs?
iv. If the company works for 252 days in a year, and the lead time 3 days, what is the safety stock?

(10 marks)

a. In a lathe workshop seven jobs arrive in sequence. These jobs are to be done in two machines. The time required for each job in machine 1 and machine 2 are tabulated below. Using the Johnson's rule, find out the sequence of the jobs to be undertaken by the workshop and estimate the total time required and the idle time for all the jobs.

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Job	Production time in M1 (minutes)	Production time in M2 (minutes)
A	80	56
B	48	72
C	45	45
D	72	55
E	56	88
F	66	74
G	72	67

(10 marks)

End of Paper